mined by those who are fortunate enough to possess a specimen, by means of Becquerel's phosphoroscope.

R. MELDOLA

21, John Street, Bedford Row, W.C., Dec. 31, 1883

IN corroboration of what Messrs. Beyerinck and Van Dam noticed at Wageningen in connection with the late storm, I write to tell you that on the morning of December 12, after the heavy rain which accompanied the gale had ceased, the windows of my house, which is isolated and exposed, were covered with a grayish sediment, just as your correspondents describe it. It will be interesting, now that attention has been drawn to the fact, to know if the phenomenon, the result no doubt of dust brought down by the rain, has been observed elsewhere.

F. M. BURTON

Highfield, Gainsborough, December 24, 1883

I SUBMIT to you two slides of dust from windows, deposited during the storm of December 12. When the contained salt crystals are dissolved by adding distilled water, the appearance much resembles that recorded in NATURE of December 20. The material, scraped from windows cleaned just before the storm, where the original drop-marks are still unaltered, was put on the cleaned slides, and a drop of distilled water added. Should my surmise be confirmed, and any of your readers desire to have specimen slides, I would forward a limited number on receipt of sixpence each to cover postage and trouble. Descriptions I have received from America, either in letters or newspaper cuttings, show an identical sequence of appearances. At Poughkeepsie, on the Hudson, the fire-engines were called out on the morning of November 27, and "this spectacle has been witnessed every clear evening for several days past, generally between a quarter past five and six o'clock." A letter from Dorset, Vermont, November 29, describes "a very unusual exhibition in the skies for the past three or four evenings. It has been clear, and the colouring intense, from flame to a delicate pink, and the clouds off at a distance would look light green. . . . It gave an impression of an intense fire the other side of the West Mountains, and colouring the entire sky."

J. EDMUND CLARK

York, December 22, 1883

THE accompanying extract may be of service to you. Sapporo is in the northernmost island of Japan (Yeso), in lat. 43° N., and long. (*circa*) 141° E. As the telegraph ramifies through all parts of Japan, it is improbable that any considerable local eruption would have taken place to account for the phenomenon without news of it having also reached the *Official Gazette*.

ROBERT BEADON

11, Lee Park, Lee, Kent, December 14, 1883

Extract from *Japan Weekly Mail* (published in Yokohama) of October 20, 1883. (The *Official Gazette* is the Government gazette published in Japanese.)—"The *Official Gazette* states that, since the 13th inst., a constant haze has pervaded the atmosphere of Sapporo, and that the sun and moon are of a blood-red colour. Clouds of ashes fall continuously. The phenomenon is ascribed to some volcanic eruption."

NOTES

PROF. OWEN has received the honour of K.C.B. as an acknowledgment of his eminent services for sixty years to science and the public interests.

PROF. W. H. MACKINTOSH has been elected to the Professorship of Comparative Anatomy in Trinity College, Dublin, vice Prof. Macalister, F.R.S., who resigned on his appointment to the Anatomy Chair at Cambridge.

BY the death of the well-known mathematician, the Rev. W. Roberts, M.A., the Rev. Richard Townsend, M.A., F.R.S., becomes a Senior Fellow of Trinity College, Dublin, thereby vacating the Professorship of Natural Philosophy held by him since 1870.

THE vacancy in the Professorship of Geology and Mineralogy in the University of Dublin has been filled by the election of Prof. Sollas, of University College, Bristol. This appointment will give great satisfaction, and will afford Mr. Sollas large opportunities for palæontological research; the large collections of fossil plants and vertebrates in the museum in Dublin remaining to this day almost unknown.

THE Swedish Government intend to establish a botanico-physiological station in the north of Sweden for the study of the flora and the diseases of the crops in that part of the country.

THE Finnish Government have ordered a steamer to be specially built in Sweden for the scientific researches about to be prosecuted in the Baltic.

M. HOUZEAU, who was only recently appointed director of the Brussels Observatory, has resigned his post, and it is reported that M. de Konkoly of Gzalla Observatory, Hungary, will succeed him.

PROF. MAURICE LEVY has been nominated member of the Paris Academy of Sciences in the Section of Mechanics.

THE Prince of Wales, as President of the Society of Arts, has transmitted to Lady Siemens the resolution passed after the death of Sir William Siemens, by the Council of that Society, and in doing so has expressed his own appreciation of Sir William Siemens's labours.

SCIENCE had quite a field-day in Perth on December 20, when the Natural History Society of the Fair City formally opened its museum. Prof. J. Geikie of Edinburgh, who was for some time president of the Society, opened the proceeding with an address in which he pointed out what such a local museum should be. Other speakers followed, and from the 20th to the 23rd was an almost continuous *conversazione*, in which exhibitions, demonstrations, and lectures were given. The electric light played a prominent part, and the objects brought together for the instruction and enjoyment of the many visitors represented all departments of science. The enterprise of the Perthshire Society is exceptional, and they have reason to be proud of their museum, reading, lecture, and other rooms, all of which, we have no doubt, will be put to excellent practical uses.

THE meteorological observations taken during October, 1883, at St. Ignatius' College, Malta, by the Rev. James Scoles, S.J., have been received. For the month the means were—pressure, 30·283 inches; temperature, 67°·98; daily range, 10°·2; elastic force of vapour, 0·498 inch, and humidity, 76; rainfall, 2·67 inches, and days of rain, 12; velocity of wind per hour, 8¼ miles; sky, a third covered with cloud; temperature of sea, 72°·0, with a monthly range of 4°·0; and thunderstorms and other electrical phenomena on the 4th, 10th, 11th, 12th, 13th, 15th, 26th, and 30th. Atmospheric pressure was thus fully a fourth of an inch below the mean, temperature 3°·4 lower than usual, and rainfall about half an inch less. This Society has peculiar facilities for prosecuting meteorological and other researches through its widely scattered seminaries and colleges, and we have the greatest pleasure in noting the increasing readiness with which its services are given to science.

MR. H. H. JOHNSTON will give a discourse on "Kilimanjaro, the snow-clad Mountain of Equatorial Africa," at the Royal Institution, on Friday evening, January 25. Prof. Bonney's discourse on "The Building of the Alps," announced for that evening will be given on April 4.

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Herr Steineger has been so fortunate as to secure eleven crania and numerous bones of the extinct sea-cow, *Rhytina stelleri*, which have been forwarded to the Smithsonian Institution at Washington.

A splendid meteor was seen at Frankfort-on-the-Maine on December 8 at 6.45 a.m. It moved from west to east, and illuminated the whole neighbourhood.

A *Times* correspondent writes from Iceland that reports of a volcanic eruption in the interior were current last year, and were founded on peculiar appearances of the sky, and especially on the observation from some of the remote inland farms of columns of smoke or vapour rising in the far distance. Nothing definite has, however, been ascertained as to these phenomena. An unusually large number of scientific men, geologists, botanists, and philologists, chiefly German and Swedish, have this year visited Iceland and investigated its structure, flora, and language; and at present Prof. Sophus Tromholt, well known in scientific circles by his researches as to the aurora borealis, is pursuing these investigations here, and intends to remain all the winter, as, from the clearness of the atmosphere and the frequency and brilliancy of the aurora, Iceland is exceedingly well suited for his observations.

The extensive collections of American Coleoptera made by the late Dr. J. L. LeConte, containing an immense number of original types, become the property of the Museum of Comparative Zoology of Cambridge, Mass.

The French Société des Électriciens has completed its arrangements, and has been divided into six sections:—Theoretical electricity, M. Marie Davy president; Dynamo-electrical machinery, transmission of force to a distance, distribution of energy, M. Tresca president; Electric lighting, M. Du Moncel president; Telegraphy and telephony, M. Blavier president; Electro-chemistry and electrotherapy, M. Jamin president.

When Arago was director of the Observatory of Paris, the dotation of this establishment was less than 4000*l*. a year. This sum was greatly increased when Leverrier was appointed by Napoleon III., and before his death it had reached 10,000*l*. Now the sum allotted is about 16,000*l*., although the meteorological department has been set apart as a special service.

The Italian Geographical Society awards its great gold medal to Count Pietro Antonelli, in consideration of the important results of his last journey to Shoa.

From advanced sheets of the *Proceedings of the Anthropological Society of Washington*, Col. F. A. Seely of the United States Patent Office, we learn from *Science*, publishes a pamphlet entitled "An Inquiry into the Origin of Invention." The author is accustomed, day by day, as new claims for patents come before him, to eliminate the successive steps in the classes of machinery until he reaches the fundamental idea. This is the plan pursued in tracing backward the whole subject of invention to its sources in the mind of primitive man. The subject is illustrated, first, by the story of the steam-engine, and then by the examination of the bow and arrow and other implements of the lower races. The author rejects Prof. Gaudry's Dryopithecus, and affirms, "Obviously, archæology can find no trace of a remoter age than that of stone; but I mistrust that the thoughtful anthropologist will accept the evidence of earlier ages, one of which, taking one of its perishable materials as the type of all, we may call the age of wood. Still farther back must lie an age, as indefinite in duration as any, when man existed in his rudest condition, without arts of any kind, except such as he employed in common with lower animals; and this is the true primitive period."

We have received the report for the years 1880 and 1881 of the administration of the artistic and scientific collections in the Royal Museums of Dresden. The Zoological and Anthropological Museum was visited by 61,129 persons in 1880, and by 65,455 in 1881. An index to Reichenbach's ornithological works has been prepared by the director, Dr. A. B. Meyer, who has also issued an important work on the picture-writings of the Eastern Archipelago and Pacific Islands. The staff of this museum now consists of the Director, Th. Kirsch, curator, L. Römer and J. C. G. Wilhelm, first and second conservators, C. A. Kippe, preparer of specimens, a scientific assistant, and two attendants. The zoological and anthropological collections were enriched in the years 1880 and 1881 by 2242 specimens of the higher animals, and 17,753 of insects, by 237 anthropological and 1351 ethnographic objects, including 61 crania and 56 photographs and drawings of human types from various quarters. The library attached to this department was increased by 332 works, including donations from the British Museum, Smithsonian, and other sources. The systematic catalogue of the fishes was completed in three volumes, with alphabetical index of the 294 genera, 726 species, and 2901 specimens contained in the collection. The nests, to the number of 800, were also rearranged and catalogued, and progress was made with the catalogues of the birds (from No. 1688 to 2948) and insects (Hymenoptera concluded, Diptera thoroughly revised, of Coleoptera three families arranged and catalogued).

Messrs. Baillière and Co. of Paris have issued the first number of a new scientific weekly, *Science et Nature*, profusely illustrated.

M. Éd. Mailly has brought out, in two volumes, a "Histoire de l'Académie Impérial et Royal de Bruxelles," from which so much good work has emanated. The history abounds in interest. F. Hayez of Brussels is the publisher.

Spain does seem to be progressing in the right direction. We have the second volume of Mr. F. Gillman's very useful and carefully compiled "Enciclopedia-Popular Illustrada" (Madrid), with a large atlas of plates. Also the first number of *La Industria Ibérica*, a weekly paper devoted to the industry and science of the whole peninsula, well printed, and, to judge from the first number, judiciously edited.

Messrs. Charles Griffin and Co. announce the following scientific publications as forthcoming:—"A Manual of Geology," by Robert Etheridge, F.R.S., and Prof. H. G. Seeley, F.R.S.; "A Manual of Chemistry," by Prof. Dupré, F.R.S., and Dr. H. Wilson Hake; "A Manual of Botany: the Morphology, Physiology, and Classification of Plants, for the Use of Students," by Prof. W. R. M'Nab; "A Pocket-book of Electrical Rules and Tables, for the Use of Electricians and Engineers," by John Munro, C.E., and Andrew Jamieson, C.E., F.R.S.E.

The additions to the Zoological Society's Gardens during the past week include a Rhesus Monkey (*Macacus rhesus*) from India, presented by Miss P. Crabtree; a Campbell's Monkey (*Cercopithecus campbelli*) from West Africa, presented by Mr. Walter van Weede; an Alligator (*Alligator mississippiensis*) from the Mississippi, presented by Mr. Thick; a Ring-tailed Coati (*Nasua rufa*) from South America, deposited.

PHYSICAL NOTES

M. E. Reynier has described, in *l'Électricien*, a research made by him on the maxima and minima of electromotive force of certain batteries in which polarisation takes place. These he calls "single-electrolyte" batteries, instead of "single-fluid" batteries, following a suggestion of the late M. Niaudet. The

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